

Wellness Survey, an Internet health survey administered to a representative sample of adults, were used. Respondents who reported experiencing OA, with the knee being the only joint affected, and who reported having had joint surgery in the past year were considered to have had a knee replacement. A matched control group was identified as a comparator to the knee replacement group by using a propensity score matching method (matching variables include demographics and health history). Knee replacement respondents and matched controls were compared with respect to the Short Form-36v2, activity impairment (from the Work Productivity and Activity Impairment questionnaire), and health care resource utilization using ANOVA tests. **RESULTS:** A total of 102 respondents were identified as part of the knee replacement group (52.0% male, 57.9 years). Compared with matched controls ( $n=102$ ), those in the knee replacement group reported significantly worse physical health status (42.5 vs. 47.6,  $p<.05$ ) though equivalent mental health status (49.7 vs. 49.0,  $p=.67$ ). Levels of activity impairment (38.0% vs. 27.0% impairment,  $p<.05$ ) and health care resource utilization (physician visits: 7.3 vs. 4.5,  $p<.05$ ; emergency room visits: 0.6 vs. 0.2,  $p<.05$ ; and hospitalizations: 0.6 vs. 0.2,  $p<.05$ ) were all significantly higher among the knee replacement group relative to matched controls. **CONCLUSIONS:** These results suggest a significant burden among knee replacement respondents across both health status and economic outcomes. Improved management of these patients may have significant societal benefits.

#### PMS85

##### COMPARING HEALTH-RELATED QUALITY OF LIFE ACROSS RHEUMATOID ARTHRITIS, PSORIATIC ARTHRITIS AND AXIAL SPONDYLOARTHRITIS: ANALYSES FROM CERTOLIZUMAB PEGOL CLINICAL TRIAL BASELINE DATA

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**OBJECTIVES:** Inflammatory diseases such as rheumatoid arthritis (RA), psoriatic arthritis (PsA) and axial spondyloarthritis (axSpA) are associated with significant burden on patients' (pts) health-related quality of life (HRQoL). The objective was to compare HRQoL across RA, PsA and axSpA populations. **METHODS:** Baseline data used from: RA pooled RAPID1 (NCT00152386) and RAPID2 (NCT00160602), RAPID-PsA (NCT01087788) and RAPID-axSpA (NCT01087762). Differences between SF-36 HRQoL scores and US general population age/gender-matched population norms were calculated and descriptively compared between the overall RA, PsA and axSpA populations, PsA subpopulations with skin involvement ( $\geq 3\%$  body surface area) and without, and axSpA subpopulations of ankylosing spondylitis (AS) and non-radiographic axSpA (nr-axSpA). Physical function was assessed using HAQ-DI in RA and PsA, and was also compared between PsA subpopulations. **RESULTS:** Comparison of SF-36 score decrement vs population norms (mean $\pm$ SD) revealed axSpA pts ( $N=317$ ) experienced a higher burden on overall physical HRQoL ( $-19.3\pm 7.5$ ) compared to RA ( $N=1535$ ;  $-17.4\pm 7.0$ ) and PsA ( $N=403$ ;  $-16.6\pm 8.0$ ) pts, while RA pts reported a higher psychological burden ( $-11.3\pm 11.2$ ) compared to axSpA ( $-9.3\pm 12.3$ ) and PsA ( $-8.6\pm 12.2$ ) pts. Comparison of HAQ-DI scores revealed RA pts experienced greater difficulties in all physical function aspects assessed, compared to PsA pts. For axSpA pts, the burden of disease (SF-36 scores) was similar between AS and nr-axSpA subgroups. For PsA pts, comparison of HRQoL scores confirmed that skin involvement does not significantly add to the physical health burden of disease but adds to some of the psycho-social aspects (eg. social function). **CONCLUSIONS:** Trends suggested axSpA had the highest burden on overall physical HRQoL followed by RA and PsA, while the burden on overall mental HRQoL was highest in RA followed by axSpA and PsA. HRQoL burden in axSpA did not appear different between subpopulations, however the presence of skin involvement in PsA was associated with a higher burden on social function.

#### PMS86

##### LONG-TERM BENEFITS OVER MORE THAN 4 YEARS OF CERTOLIZUMAB PEGOL COMBINATION THERAPY ON WORKPLACE AND HOUSEHOLD PRODUCTIVITY, AND PARTICIPATION IN SOCIAL ACTIVITIES IN RHEUMATOID ARTHRITIS: RESULTS FROM THE OPEN-LABEL EXTENSION STUDY OF RAPID1

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**OBJECTIVES:** In the RAPID1 randomized controlled trial (RCT; NCT00152386), certolizumab pegol (CZP) every 2 weeks (Q2W) plus MTX provided rapid improvements in clinical measures, and workplace and household productivity over 52 weeks (wks) in patients (pts) with active rheumatoid arthritis (RA). We report the long-term effect of CZP+MTX Q2W on workplace and household productivity and social participation in RA pts from the RAPID1 open-label extension (OLE; NCT00175877). **METHODS:** RAPID1 52-wk Completers and Wk16 Withdrawers were eligible for treatment in OLE with CZP 400mg Q2W +MTX, reduced per study protocol to 200mg Q2W +MTX after  $\geq 6$  months in OLE. Workplace and household productivity were assessed through the validated RA-specific Work Productivity Survey (WPS-RA). WPS-RA responses (observed cases) are summarized for CZP RCT Completers who enrolled in OLE and completed WPS-RA at OLE completion/withdrawal visit (C/W). **RESULTS:** Of CZP Completers who enrolled in OLE ( $N=508$ ), 388 remained at Wk208 (4yrs) and a subset of 290 completed WPS-RA at OLE C/W (after minimum 4.3 and maximum 6.2 years CZP treatment from RCT baseline [BL]). Of these pts at RCT BL ( $N=267$ ), 49% were employed outside the home, 21% were RA work-disabled, 14% were homemakers and 13% were retired. Employed pts reported long-term reductions in absenteeism [mean BL:3.7 ( $N=131$ ), C/W:0.1 ( $N=129$ )], number of days with decreased productivity (presenteeism) [mean BL:7.8, C/W:0.4] and level of RA interference with work productivity [mean BL:5.0, C/W:1.3, on 0–10 scale] per month. Similar decreases were reported in the number of household work days missed (mean BL:8.1, C/W:1.0),

days with  $\geq 50\%$  decreased household productivity (mean BL:10.5, C/W:1.2), RA interference with household productivity (mean BL:6.2, C/W:2.0) and days missed per month of family/social/leisure activity (mean BL:5.8, C/W:0.7). **CONCLUSIONS:** In the RAPID1 OLE, CZP Q2W plus MTX maintained improvements in workplace and household productivity and increased social activity participation over  $>4$  yrs.

#### PMS87

##### CONTINUED IMPROVEMENTS IN WORKPLACE AND HOUSEHOLD PRODUCTIVITY WITH CERTOLIZUMAB PEGOL TREATMENT IN AXIAL SPONDYLOARTHRITIS, INCLUDING ANKYLOSING SPONDYLITIS AND NON-RADIOGRAPHIC AXIAL SPONDYLOARTHRITIS: 48-WEEK RESULTS FROM THE RAPID-AXSPA STUDY

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**OBJECTIVES:** Investigate certolizumab pegol (CZP) effect on workplace and household productivity up to 48 weeks (wks) in patients (pts) with axial spondyloarthritis (axSpA), including ankylosing spondylitis (AS, meeting modified New York criteria) and non-radiographic axSpA (nr-axSpA). **METHODS:** The ongoing RAPID-axSpA trial (NCT01087762) is double-blind and placebo-controlled to Wk24 and dose-blind to Wk48. Pts had active axSpA, according to ASAS criteria, including AS and nr-axSpA. Pts originally randomized to CZP (200mg Q2W or 400mg Q4W, following 400mg loading dose at Wks 0, 2, 4) continued on their assigned dose in dose-blind phase; placebo pts entering dose-blind phase were re-randomized to CZP loading dose, followed by CZP 200mg Q2W or 400mg Q4W. The validated arthritis-specific Work Productivity Survey (WPS; administered Q4W) assessed the impact of axSpA on workplace and household productivity. WPS responses (LOCF imputation) in pts originally randomized to CZP in the full analysis set (FAS) are summarized descriptively over 48 wks. **RESULTS:** A total of 325 pts were randomized, of which 218 were assigned to CZP 200mg Q2W or CZP 400mg Q4W. 69.4% and 74.9% of pts were employed at baseline (BL) in the CZP 200mg Q2W and CZP 400mg Q4W groups, respectively. By Wk48, employed CZP pts reported reduced workplace absenteeism (Wk48: mean 0.4 and 0.1 days missed/month for CZP 200 mg Q2W and 400 mg Q4W, respectively vs BL: mean 2.3 and 1.4 days/month) and presenteeism (Wk48: mean 1.0 and 1.6 days with reduced productivity/month vs BL: mean 5.8 and 4.7 days/month). Continued improvements in both CZP groups to Wk48 were also observed in household productivity and participation in social/leisure activities. Similar improvements were seen in AS and nr-axSpA populations. **CONCLUSIONS:** The initial improvements with CZP in workplace and household productivity and increased participation in social/leisure activities observed over 24 wks were continued to Wk48 in axSpA, AS and nr-axSpA pts.

#### PMS88

##### SUSTAINED IMPROVEMENTS IN PRODUCTIVITY AT PAID WORK AND WITHIN HOUSEHOLD, AND INCREASED PARTICIPATION IN DAILY ACTIVITIES OVER TIME WITH CERTOLIZUMAB PEGOL IN PATIENTS WITH PSORIATIC ARTHRITIS: 48-WEEK RESULTS FROM THE RAPID-PSA STUDY

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**OBJECTIVES:** To examine the effect of certolizumab pegol (CZP) on workplace and household productivity up to 48 weeks (wks), in patients (pts) with active psoriatic arthritis (PsA). **METHODS:** The ongoing RAPID-PsA trial (NCT01087788) is double-blind and placebo-controlled to Wk24 and dose-blind to Wk48. Pts had active PsA and had failed  $\geq 1$  DMARD. Pts originally randomized to CZP (200mg Q2W or 400mg Q4W, following 400mg loading dose at Wks 0, 2, 4) continued on their assigned dose in dose-blind phase; placebo pts entering dose-blind phase were re-randomized to CZP loading dose, followed by CZP 200mg Q2W or CZP 400mg Q4W. This publication reports data for pts in the randomized set (RS) originally randomized to CZP. The validated arthritis-specific Work Productivity Survey (WPS), administered Q4W from baseline (BL), assessed the impact of PsA on workplace and household productivity. WPS responses (LOCF imputation) in both CZP groups are summarized descriptively over 48 wks. **RESULTS:** 409 pts were randomized, of which 273 were assigned to CZP 200mg Q2W or CZP 400mg Q4W. 87% of patients randomized to CZP completed to Wk48. 60.1% and 61.5% were employed at BL in the CZP 200mg Q2W and CZP 400mg Q4W groups, respectively. By Wk48, employed CZP pts reported reduced workplace absenteeism (Wk48: mean 0.1 and 0.6 days missed/month for CZP 200mg Q2W and 400mg Q4W, respectively vs BL: mean 2.0 and 1.6 days/month) and presenteeism (Wk48: mean 0.8 and 1.9 days with reduced productivity/month vs BL: mean 5.2 and 5.1 days/month). CZP groups also reported improvements in household productivity and increased participation in social/leisure activities up to Wk48. **CONCLUSIONS:** The initial improvements with CZP in workplace and household productivity, and participation in social/leisure activities observed over 24 wks were maintained over 48 wks in PsA pts.

#### PMS89

##### FACTORS ASSOCIATED WITH ABSENTEEISM IN RHEUMATOID ARTHRITIS PATIENTS IN EMPLOYMENT: RESULTS OF A SURVEY AMONG FRENCH PATIENTS

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**OBJECTIVES:** To investigate the contribution of different socio-economic and clinical factors to absenteeism in the workplace in a population of Rheumatoid Arthritis (RA) patients currently in employment. **METHODS:** A national retrospective survey was conducted in French RA patients (age  $<60$ , either employed or unemployed) recruited by rheumatologists or who were members of a patients' association (ANDAR). Patient-reported outcomes, socio-economic characteristics and various measures of productivity loss were collected using structured telephone interviews. Multivariate

regression analyses were performed to identify the contributing factors to absenteeism. **RESULTS:** A sample of 503 patients agreed to participate, of which 488 were evaluable. 364 patients (74.6%) were in employment, 31 (6.4%) were unemployed and 93 (19.1%) were out of the labor market. Among the 364 patients currently in employment, 102 (28.0%), 138 (37.9%) and 124 (34.1%) were in ACR functional class of I, II and III/IV, respectively. The mean HAQ scores were 0.6, 1.4 and 1.5 ( $p < 0.0001$ ), and 2.9%, 16.7% and 29.0% ( $p < 0.0001$ ), respectively, had an occupational disability status. An overall proportion of 48.3% patients declared an RA associated work absence over the last year. This proportion increased from 28.4% in ACR I to 62% in ACR III/IV group, and from 7.8% to 31.4% ( $p < 0.0001$ ), respectively, for absence  $> 1$  month. Despite a high uptake of biologic agents (60.4%) among these patients, RA was active for a significant period of time; mean 2.2 ( $\pm 3.2$ ) months in ACR I group and 4.8 ( $\pm 4.2$ ) months in ACR III/IV group. Regression analyses suggested that ACR functional class and frequencies and duration of flares were the major factors contributing to absenteeism, far ahead of any other socio-economic characteristics. **CONCLUSIONS:** Loss of productivity due to RA could be further reduced through better control of disease activity.

#### MUSCULAR-SKELETAL DISORDERS – Health Care Use & Policy Studies

##### PMS90

#### A REVIEW OF COST-EFFECTIVENESS EVALUATIONS AS PART OF NATIONAL HTA ASSESSMENTS OF BIOLOGIC DMARDs IN THE TREATMENT OF RHEUMATOID ARTHRITIS

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**OBJECTIVES:** Rheumatoid arthritis is an autoimmune chronic disease which is associated with an increasing disability of patients and high socioeconomic burden. Given the large number of economic evaluations considered by national HTAs, this review attempts to clarify whether biologic DMARDs cost-effectiveness and cost-utility results form the basis for official recommendation by national HTA agencies. **METHODS:** Both older biologic anti-TNF $\alpha$  drugs (etanercept, infliximab and adalimumab) and novel bDMARDs (abatacept, tocilizumab, certolizumab, golimumab and rituximab) were considered. All main HTA agencies were searched for published economic evaluations up to 2012. Documents were selected if they included cost-effectiveness or cost-utility as outcome, if they referred to at least one of the drugs of interest, if they were published in English and if they were not superseded by other analysis. PICO statements were used to define exclusion criteria. **RESULTS:** Of the 65 documents initially identified through the search strategy, 20 documents were selected. The associated HTA agencies were PBAC (Australia), CADTH (Canada), SMC (Scotland) and NICE (England). In relation to older anti-TNF $\alpha$  drugs, documents published by NICE were found to be the only explicitly recommending the drugs on the basis of obtained cost-utility results. Economic evaluations of novel bDMARDs published by SMC and NICE appeared to inform HTA decisions not to recommend abatacept and to list all other drugs conditional on price facilitation and following failure of rituximab. By contrast, cost-utility analysis published by PBAC and CADTH did not appear to influence official recommendations on novel biologic DMARDs. **CONCLUSIONS:** Cost-effectiveness and cost-utility evidence was not equally perceived by decision makers and did not have equal weight in defining the official listing of biologic DMARDs for the treatment of RA. Further research should therefore address methods for a greater integration between health economic analysis and final decisions taken by National HTA agencies.

##### PMS91

#### COST-EFFECTIVENESS ANALYSIS OF ALENDRONATE THERAPY FOR SECONDARY PREVENTION OF OSTEOPOROTIC FRACTURES

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**OBJECTIVES:** Although osteoporotic fractures impose a heavy financial burden on society as a whole, only 20% of patients with osteoporosis and in risk of fracture are being treated. The purpose of this study was to estimate the cost-effectiveness of alendronate therapy for secondary prevention of osteoporotic fractures in Japan. **METHODS:** A patient-level simulation model with nine health states was developed to predict lifetime costs and quality-adjusted life years (QALYs) of five years of alendronate therapy versus no preventive treatment for Japanese women with osteoporosis, who have a history of hip fracture. Fracture risk associated with age and bone mineral density (BMD) was derived from epidemiologic studies in Japan. We ran the model with different combinations of age (50, 60, and 70), BMD (T-score of  $-2.5$  and  $-2.0$ ), and BMD-independent fracture risk factors. **RESULTS:** For patients with T-score of  $-2.0$  having no additional risk factors, the incremental cost-effectiveness ratio (ICER) of alendronate was \$3,023 and \$7,389 per QALY gained for those aged 60 and 70 years, respectively. In all other situations, alendronate was dominant over no preventive treatment, with lifetime cost savings ranging from \$30,849 to \$1,498,961. These results were fairly robust to variations in model parameters. **CONCLUSIONS:** Alendronate therapy for secondary fracture prevention in Japanese women with osteoporosis provided good value for money.

##### PMS92

#### COMPARISON OF CLINICAL CHARACTERISTICS OF PATIENTS WITH RHEUMATOID ARTHRITIS RECEIVING THEIR FIRST BIOLOGIC AND BIOLOGIC-NAIVE PATIENTS CONSIDERED BIOLOGIC-SUITABLE IN THE UNITED STATES

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**OBJECTIVES:** To assess clinical characteristics of RA patients considered suitable for biologic therapy (by their physicians) in comparison to those currently treated with 1<sup>st</sup> line biologics in the US. **METHODS:** A medical chart-review study of RA patients was conducted among physicians (primarily rheumatologists) in hospitals/

private practices to collect de-identified data on patient diagnosis, treatment patterns/dynamics and patient symptomatology/disease status. Physicians from the US were screened for duration of practice and patient volume and recruited from a large panel to be geographically representative. Eligible patient charts ( $> 6$  biologic patients,  $> 2$  biologic-suitable (and yet biologic-naïve) patients per physician judgment) were randomly selected from a sample of prospective patients visiting each center/practice during the screening period. **RESULTS:** Ninety-seven physicians abstracted 726 eligible RA patient charts; 378 (52%) patients were on their first biologic and 175 (24%) patients have never experienced biologic but were considered suitable for one. Mean age was: 1<sup>st</sup> line-52.8yrs, biologic-suitable-51.5yrs; Female: 1<sup>st</sup> line-73%, biologic-suitable-76%. Disease severity at diagnosis and current disease severity (both per physician judgment) (mild/moderate/severe) were: 1<sup>st</sup> line – 6%/74%/14% and 67%/29%/3%, biologic-suitable – 11%/74%, 10% and 25%/66%/9% respectively. Current drug class usage differed between the two groups (1<sup>st</sup> line/biologic-suitable): non-biologic-DMARD (57%/88%), steroids (19%/36%), NSAIDs-COX2-inhibitors (6%/10%), NSAIDs- non-COX2-inhibitors (14%/22%), and analgesics (11%/12%). Key lab measures were (1<sup>st</sup> line/biologic-suitable): ESR(24.2/40.0 mm/h) and CRP(2.5mg/5.6 dl). Current ACR-scores were (1<sup>st</sup> line/biologic-suitable): no response(2%/19%), ACR20(12%/36%), ACR50(18%/15%), ACR70(20%/5%), ACR90(26%/1%). Among patients with available data, current HAQ (1<sup>st</sup> line-0.7, biologic-suitable-1.1), DAS28 (1<sup>st</sup> line-2.5, biological-suitable-4.1), 100mmVAS (1<sup>st</sup> line-2.3, biological-suitable-4.6), Swollen Joint Count (1<sup>st</sup> line-2.0, biological-suitable-5.9) and Tender Joint Count (1<sup>st</sup> line-2.8, biological-suitable-7.0) differed between the patient groups. **CONCLUSIONS:** Compared to the patients currently treated with 1<sup>st</sup> line biologic, RA biologic-naïve but suitable patients (per physician judgment) had relatively higher disease burden. Reasons for non-initiation of biologic treatment among 'biologic-suitable' patients warrant further investigation to alleviate disease burden.

##### PMS93

#### COMPARISON OF DISEASE STATUS, TREATMENTS AND OUTCOMES OF PATIENTS WITH PSORIATIC ARTHRITIS RECEIVING THEIR FIRST BIOLOGIC IN THE EUROPEAN UNION AND UNITED STATES

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**OBJECTIVES:** To compare the disease status and outcomes of patients with PsA receiving their first biologic in UK, Germany, France, Italy and Spain (SEU) with the US. **METHODS:** A multi-country multi-center medical chart-review study of PsA patients was conducted among physicians (majority: rheumatologists) in hospitals/private practices to collect de-identified data on patients who were recently treated with a biologic as part of usual care. Physicians were screened for duration of practice and patient volume and recruited from a large panel to be geographically representative in each country. Eligible PsA patient charts ( $> 3$ ) were randomly selected from a sample of prospective patients visiting each center/practice during the screening period. Physicians abstracted patient diagnosis, treatment patterns/dynamics and patient symptomatology/disease status/outcomes. **RESULTS:** In 4Q2012, 434 physicians (SEU:337, US:97) abstracted 790 eligible PsA patient charts (SEU:606, US:184); 674 (85%) (SEU:527, US:147) patients were on their first biologic (mean-age: SEU:47.4yrs, US:47.6yrs; female: SEU:48.6%, US:44.9%). Time-to-1<sup>st</sup> biologic from diagnosis (SEU:41.0months, US:27.2months) and time-on-current biologic (SEU:23.2months, US:36.7months) differed between regions. Top-2 biologic treatments observed were adalimumab (SEU:47%, US:47%) and etanercept (SEU:36%, US:32%). Among the top-4 reasons for biologic treatment initiation, 'mechanism of action', 'improve signs/symptoms', 'positive personal experience' and 'prevention of structural damage' were observed in both the SEU and US. Key lab measures documented were: ESR (SEU:20.6mm/h, US:23.7mm/h) and CRP (SEU:9.4mg/dl, US:2.8mg/dl). Current disease severity per physician-judgment (mild/moderate/severe) was: SEU-61%/33%/5%, US-73%/26%/1%. Among patients with available data, current HAQ (SEU:1.3, US:0.6), VAS provider score (SEU:3.1, US:2.6), VAS patient score (SEU:3.4, US:2.7) and Swollen Joint Count (SEU:2.0, US:1.7) differed across regions. **CONCLUSIONS:** Among PsA patients receiving their first biologic, disease severity and outcomes differed between SEU and US, with patients in SEU with relatively higher burden and poorer outcomes.

##### PMS94

#### PATTERNS OF DISEASE REMISSION AMONG PATIENTS WITH RHEUMATOID ARTHRITIS RECEIVING THEIR FIRST BIOLOGIC IN EUROPEAN UNION

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**OBJECTIVES:** To assess the patterns of disease remission among RA patients receiving their first biologic in 5-EU countries, namely, UK, Germany(DE), France(FR), Italy(IT) & Spain(SP). **METHODS:** A multi-country multi-center medical chart-review study of RA patients was conducted among physicians (majority: rheumatologists) in hospitals/private practices to collect de-identified data on patients who were recently treated with a biologic as part of usual care. Physicians were screened for practice-duration and patient-volume and recruited from a large panel to be geographically representative in each country. Patient charts ( $\geq 5$ ) were randomly selected within each center/practice. Physicians abstracted patient diagnosis, treatment patterns/dynamics and patient symptomatology/disease status (incl. assessment of 'disease remission', per physician clinical judgment). **RESULTS:** In 4Q2011, 370 physicians abstracted 2208 eligible RA patient charts (UK:410, FR:499, DE:404, IT:415, SP:480); patient mean-age:51yrs, female:71%; 75% and 20% were on 1<sup>st</sup> line and 2<sup>nd</sup> line biologic respectively. Overall, 53% of patients were in remission (UK:54%, FR:56%, DE:61%, IT:41%, SP:53%). Remission-rates differed by biologic lines: 1<sup>st</sup>-line:53%, 2<sup>nd</sup>-line:53%, 3<sup>rd</sup>-line:46%, 4<sup>th</sup>-line:42%, 5<sup>th</sup>-line:38%. Among those with lab measures, results differed between those in remission vs. those who were not: mean ESR(mm/h): 17.0vs.32.1, mean CRP(mg/dl): 7.0vs.15.6, mean MMP3(ng/ml): 2.8-vs-4.7, Rheumatoid Factor (% positive): 83%-vs-86% and Anti-CCP (% positive): 75%-vs-79%. Among those with data, recent (mean) disease severity scores